

10/526,775

**EAST Search History**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	30	linker\$1 near1 oligosaccharide\$1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/02/01 16:10
L2	28	linker\$1 same (dithiolane or \$2thioctic or lipoic)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/02/01 16:15
L3	2	I2 and (saccharide or oligosaccharide)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/02/01 16:16
L4	18	I2 and (sugar or saccharide or oligosaccharide)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/02/01 16:17
L5	150	(sensor\$1 or biosensor\$1) same ligand\$1 same sugar\$1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/02/01 16:18
L6	10	I5 same (biotin or dithiol\$3 or thioctic or lipoic)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/02/01 16:19

10/526,775.

Connecting via Winsock to STN

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TERMINAL (ENTER 1, 2, 3, OR ?):2

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NEWS 1		Web Page URLs for STN Seminar Schedule - N. America
NEWS 2		"Ask CAS" for self-help around the clock
NEWS 3	OCT 23	The Derwent World Patents Index suite of databases on STN has been enhanced and reloaded
NEWS 4	OCT 30	CHEMLIST enhanced with new search and display field
NEWS 5	NOV 03	JAPIO enhanced with IPC 8 features and functionality
NEWS 6	NOV 10	CA/CAPLUS F-Term thesaurus enhanced
NEWS 7	NOV 10	STN Express with Discover! free maintenance release Version 8.01c now available
NEWS 8	NOV 20	CA/CAPLUS to MARPAT accession number crossover limit increased to 50,000
NEWS 9	DEC 01	CAS REGISTRY updated with new ambiguity codes
NEWS 10	DEC 11	CAS REGISTRY chemical nomenclature enhanced
NEWS 11	DEC 14	WPIDS/WPINDEX/WPIX manual codes updated
NEWS 12	DEC 14	GBFULL and FRFULL enhanced with IPC 8 features and functionality
NEWS 13	DEC 18	CA/CAPLUS pre-1967 chemical substance index entries enhanced with preparation role
NEWS 14	DEC 18	CA/CAPLUS patent kind codes updated
NEWS 15	DEC 18	MARPAT to CA/CAPLUS accession number crossover limit increased to 50,000
NEWS 16	DEC 18	MEDLINE updated in preparation for 2007 reload
NEWS 17	DEC 27	CA/CAPLUS enhanced with more pre-1907 records
NEWS 18	JAN 08	CHEMLIST enhanced with New Zealand Inventory of Chemicals
NEWS 19	JAN 16	CA/CAPLUS Company Name Thesaurus enhanced and reloaded
NEWS 20	JAN 16	IPC version 2007.01 thesaurus available on STN
NEWS 21	JAN 16	WPIDS/WPINDEX/WPIX enhanced with IPC 8 reclassification data
NEWS 22	JAN 22	CA/CAPLUS updated with revised CAS roles
NEWS 23	JAN 22	CA/CAPLUS enhanced with patent applications from India
NEWS 24	JAN 29	PHAR reloaded with new search and display fields
NEWS 25	JAN 29	CAS Registry Number crossover limit increased to 300,000 in multiple databases

NEWS EXPRESS NOVEMBER 10 CURRENT WINDOWS VERSION IS V8.01c, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 25 SEPTEMBER 2006.

NEWS HOURS	STN Operating Hours Plus Help Desk Availability
NEWS LOGIN	Welcome Banner and News Items
NEWS IPC8	For general information regarding STN implementation of IPC 8
NEWS X25	X.25 communication option no longer available

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\*\*\*\*\* STN Columbus \*\*\*\*\*

FILE 'HOME' ENTERED AT 16:25:16 ON 01 FEB 2007

=>

Uploading

THIS COMMAND NOT AVAILABLE IN THE CURRENT FILE

Do you want to switch to the Registry File?

Choice (Y/n):

Switching to the Registry File...

Some commands only work in certain files. For example, the EXPAND command can only be used to look at the index in a file which has an index. Enter "HELP COMMANDS" at an arrow prompt (=>) for a list of commands which can be used in this file.

=> FILE REGISTRY

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.21

0.21

FILE 'REGISTRY' ENTERED AT 16:25:39 ON 01 FEB 2007

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STRUCTURE FILE UPDATES: 31 JAN 2007 HIGHEST RN 918932-71-5

DICTIONARY FILE UPDATES: 31 JAN 2007 HIGHEST RN 918932-71-5

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TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

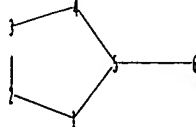
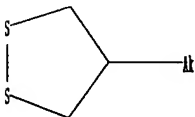
Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

=>

Uploading C:\Program Files\Stnexp\Queries\10526775.str



chain nodes :

6

ring nodes :

1 2 3 4 5

chain bonds :

5-6  
ring bonds :  
1-2 1-5 2-3 3-4 4-5  
exact/norm bonds :  
5-6  
exact bonds :  
1-2 1-5 2-3 3-4 4-5  
isolated ring systems :  
containing 1 :

Match level :  
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:CLASS

L1       STRUCTURE UPLOADED

=> s l1

SAMPLE SEARCH INITIATED 16:25:48 FILE 'REGISTRY'  
SAMPLE SCREEN SEARCH COMPLETED -       326 TO ITERATE

100.0% PROCESSED       326 ITERATIONS       16 ANSWERS  
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:   ONLINE   \*\*COMPLETE\*\*  
                          BATCH    \*\*COMPLETE\*\*  
PROJECTED ITERATIONS:       5437 TO       7603  
PROJECTED ANSWERS:         80 TO         560

L2       16 SEA SSS SAM L1

=> s l1 sss full

FULL SEARCH INITIATED 16:25:59 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED -       6701 TO ITERATE

100.0% PROCESSED       6701 ITERATIONS       331 ANSWERS  
SEARCH TIME: 00.00.01

L3       331 SEA SSS FUL L1

=> FIL CAPLUS

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	172.10	172.31

FILE 'CAPLUS' ENTERED AT 16:26:04 ON 01 FEB 2007  
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FILE COVERS 1907 - 1 Feb 2007 VOL 146 ISS 6  
FILE LAST UPDATED: 31 Jan 2007 (20070131/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply.  
They are available for your review at:

<http://www.cas.org/infopolicy.html>

=> s l1 and (sugar or saccharide or oligosaccharide)

REGISTRY INITIATED

Substance data SEARCH and crossover from CAS REGISTRY in progress...

Use DISPLAY HITSTR (or FHITSTR) to directly view retrieved structures.

SAMPLE SEARCH INITIATED 16:26:40 FILE 'REGISTRY'  
SAMPLE SCREEN SEARCH COMPLETED - 326 TO ITERATE

100.0% PROCESSED 326 ITERATIONS 16 ANSWERS  
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*

PROJECTED ITERATIONS: 5437 TO 7603  
PROJECTED ANSWERS: 80 TO 560

L4 16 SEA SSS SAM L1

L5 42 L4

257812 SUGAR  
130694 SUGARS  
329474 SUGAR  
(SUGAR OR SUGARS)  
9823 SACCHARIDE  
9664 SACCHARIDES  
16433 SACCHARIDE  
(SACCHARIDE OR SACCHARIDES)  
30041 OLIGOSACCHARIDE  
45426 OLIGOSACCHARIDES  
54287 OLIGOSACCHARIDE  
(OLIGOSACCHARIDE OR OLIGOSACCHARIDES)  
L6 0 L5 AND (SUGAR OR SACCHARIDE OR OLIGOSACCHARIDE)

=> s l3 and (sugar or saccharide or oligosaccharide)

238 L3  
257812 SUGAR  
130694 SUGARS  
329474 SUGAR  
(SUGAR OR SUGARS)  
9823 SACCHARIDE  
9664 SACCHARIDES  
16433 SACCHARIDE  
(SACCHARIDE OR SACCHARIDES)  
30041 OLIGOSACCHARIDE  
45426 OLIGOSACCHARIDES  
54287 OLIGOSACCHARIDE  
(OLIGOSACCHARIDE OR OLIGOSACCHARIDES)

L7 0 L3 AND (SUGAR OR SACCHARIDE OR OLIGOSACCHARIDE)

=> s l3 and (sensor or chip or biosensor)

238 L3  
159461 SENSOR  
119844 SENSORS  
200411 SENSOR  
(SENSOR OR SENSORS)  
76632 CHIP  
44205 CHIPS  
104631 CHIP  
(CHIP OR CHIPS)  
19323 BIOSENSOR  
24011 BIOSENSORS  
28679 BIOSENSOR  
(BIOSENSOR OR BIOSENSORS)

L8 2 L3 AND (SENSOR OR CHIP OR BIOSENSOR)

=> d l8 ibib abs hitstr tot

L8 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:1173709 CAPLUS

DOCUMENT NUMBER: 145:485403

TITLE: Self-assembled grafted polymeric layer for use in biosensor technology

INVENTOR(S): Zhou, Cheng; Borghs, Gustaaf; Laureyn, Wim

PATENT ASSIGNEE(S): Belg.

SOURCE: U.S. Pat. Appl. Publ., 29pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

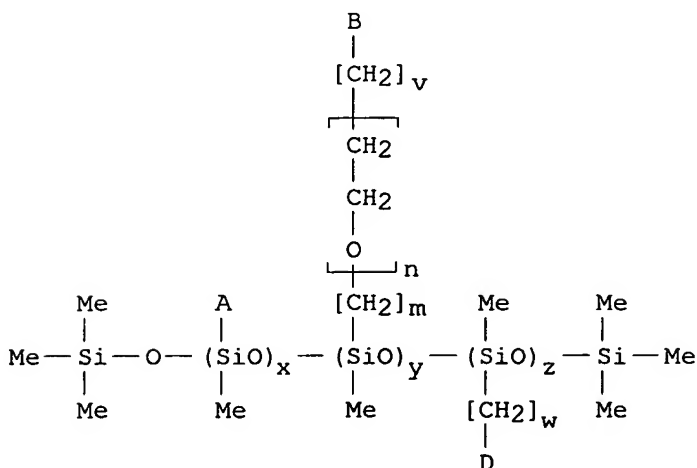
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2006252094	A1	20061109	US 2005-120756	20050503
PRIORITY APPLN. INFO.:			US 2005-120756	20050503

GI



I

AB A water soluble functional polyethylene glycol-grafted polysiloxane polymer

comprising a polysiloxane backbone and polyethylene glycol side chains is provided having the general formula (I,  $(\text{CH}_3)_3\text{SiO}(\text{Si}(\text{A})(\text{CH}_3)\text{O})_x(\text{Si}(\text{CH}_3)((\text{C}\text{H}_2)_m(\text{OCH}_2\text{CH}_2)_n(\text{CH}_2)_v\text{B})\text{O})_y(\text{Si}(\text{CH}_3)((\text{CH}_2)_w\text{D})\text{O})\text{Si}(\text{CH}_3)_3$  : wherein A is selected from the group consisting of hydrogen, Me, methoxy and functional polyethylene glycol based chains, B is a functional group for binding biol.-sensitive materials, D is a functional group for binding to a substrate, m is from 3 to 5, v is from 0 to 5, w is from 4 to 11, x is from 0 to 35 and z is from 1 to 33. In order to be water soluble, the polysiloxane polymer has the following properties:  $x+y+z$  is from 8 to 40, n is from 8 to 30, and y is from 7 to 35. The synthesis of several functional PEG-grafted polysiloxane polymers is described. Formula I ( $x = 4$ ;  $y = 26$ ;  $z = 5$ ;  $A = \text{H}$ ;  $m = 3$ ;  $n = 25$ ;  $v = 1$ ;  $B = \text{methoxy}$ ;  $w = 11$ ; and  $D = -\text{S}-\text{S}-\text{CH}_2-\text{CH}_3$ ) was deposited on a gold substrate and prevented nonspecific protein adsorption. A different polymer I, in which  $B = \text{COOH}$ , was used to modify a surface plasmon resonance chip and bind anti-human transferrin antibody for a biosensor.

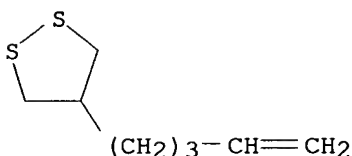
IT 914398-57-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(self-assembled grafted polymeric layer for use in biosensor technol.)

RN 914398-57-5 CAPLUS

CN 1,2-Dithiolane, 4-(4-pentenyl)- (9CI) (CA INDEX NAME)



L8 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:978095 CAPLUS

DOCUMENT NUMBER: 138:49099

TITLE: Sensitive and selective method and device for the detection of trace amounts of a substance

INVENTOR(S): Dayan, Lev; Shalom, Moshe

PATENT ASSIGNEE(S): M.S. Tech Ltd., Israel; Dayagi, Yohai Y.

SOURCE: PCT Int. Appl., 55 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002103340	A2	20021227	WO 2002-11492	20020620
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2002314492	A1	20030102	AU 2002-314492	20020620
EP 1423685	A2	20040602	EP 2002-741130	20020620

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

US 2004194548 A1 20041007 US 2004-481685 20040317  
PRIORITY APPLN. INFO.: US 2001-885909 A 20010620  
IL 2001-144255 A 20010711  
WO 2002-IL492 W 20020620

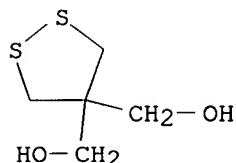
OTHER SOURCE(S): MARPAT 138:49099

AB A piezoelec. crystal element and a sensor using the same are presented for use in a sensor device for identifying at least one foreign material from environment. The crystal element comprises at least one crystal resonator as an inverted mesa structure, which has a membrane-like region and has a certain resonance frequency value. A surface region of the crystal resonator is modified by reactive mols. of a kind capable of interacting with the foreign material to yield a reaction product that effects a change in the resonance frequency of the crystal resonator from said certain resonance frequency value. This change is indicative of the identity and quantity of the foreign material.

IT 1121-96-6P, 4,4-Bis(hydroxymethyl)-1,2-dithiolane  
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(sensitive and selective method and sensor for detection of trace amts. of substance)

RN 1121-96-6 CAPLUS

CN 1,2-Dithiolane-4,4-dimethanol (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



=> s (dithiolane or thioctic or lipoic) and (sensor or plasmon or biosensor or solid)

3025 DITHIOLANE  
569 DITHIOLANES  
3167 DITHIOLANE  
(DITHIOLANE OR DITHIOLANES)

988 THIOCTIC  
4022 LIPOIC  
159461 SENSOR  
119844 SENSORS  
200411 SENSOR  
(SENSOR OR SENSORS)

23715 PLASMON  
4696 PLASMONS  
24562 PLASMON  
(PLASMON OR PLASMONS)

19323 BIOSENSOR  
24011 BIOSENSORS  
28679 BIOSENSOR  
(BIOSENSOR OR BIOSENSORS)

1055137 SOLID  
289183 SOLIDS  
1268342 SOLID  
(SOLID OR SOLIDS)

L9 360 (DITHIOLANE OR THIOCTIC OR LIPOIC) AND (SENSOR OR PLASMON OR BIOSENSOR OR SOLID)



```
=> s 19 and (glucose or sugar or olicosaccharide or polysaccharide or carbohydrate)
416218 GLUCOSE
817 GLUCOSES
416394 GLUCOSE
      (GLUCOSE OR GLUCOSES)
257812 SUGAR
130694 SUGARS
329474 SUGAR
      (SUGAR OR SUGARS)
1 OLICOSACCHARIDE
1 OLICOSACCHARIDES
2 OLICOSACCHARIDE
      (OLICOSACCHARIDE OR OLICOSACCHARIDES)
60021 POLYSACCHARIDE
75515 POLYSACCHARIDES
95228 POLYSACCHARIDE
      (POLYSACCHARIDE OR POLYSACCHARIDES)
129038 CARBOHYDRATE
148363 CARBOHYDRATES
215514 CARBOHYDRATE
      (CARBOHYDRATE OR CARBOHYDRATES)
L10      39 L9 AND (GLUCOSE OR SUGAR OR OLICOSACCHARIDE OR POLYSACCHARIDE
      OR CARBOHYDRATE)
```

```
=> d l10 ibib abs hitstr tot
THE ESTIMATED COST FOR THIS REQUEST IS 205.53 U.S. DOLLARS
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:n
REQUEST CANCELED
```

```
=> s l10 and linker
21244 LINKER
5072 LINKERS
24169 LINKER
      (LINKER OR LINKERS)
L11      4 L10 AND LINKER
```

```
=> d l10 and ligand
'AND' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'
'LIGAND' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'
```

The following are valid formats:

```
ABS ----- GI and AB
ALL ----- BIB, AB, IND, RE
APPS ----- AI, PRAI
BIB ----- AN, plus Bibliographic Data and PI table (default)
CAN ----- List of CA abstract numbers without answer numbers
CBIB ----- AN, plus Compressed Bibliographic Data
CLASS ----- IPC, NCL, ECLA, FTERM
DALL ----- ALL, delimited (end of each field identified)
DMAX ----- MAX, delimited for post-processing
FAM ----- AN, PI and PRAI in table, plus Patent Family data
FBIB ----- AN, BIB, plus Patent FAM
IND ----- Indexing data
IPC ----- International Patent Classifications
MAX ----- ALL, plus Patent FAM, RE
PATS ----- PI, SO
SAM ----- CC, SX, TI, ST, IT
SCAN ----- CC, SX, TI, ST, IT (random display, no answer numbers;
      SCAN must be entered on the same line as the DISPLAY,
      e.g., D SCAN or DISPLAY SCAN)
STD ----- BIB, CLASS
```

IABS ----- ABS, indented with text labels  
 IALL ----- ALL, indented with text labels  
 IBIB ----- BIB, indented with text labels  
 IMAX ----- MAX, indented with text labels  
 ISTD ----- STD, indented with text labels  
  
 OBIB ----- AN, plus Bibliographic Data (original)  
 OIBIB ----- OBIB, indented with text labels  
  
 SBIB ----- BIB, no citations  
 SIBIB ----- IBIB, no citations  
  
 HIT ----- Fields containing hit terms  
 HITIND ----- IC, ICA, ICI, NCL, CC and index field (ST and IT)  
                   containing hit terms  
 HITRN ----- HIT RN and its text modification  
 HITSTR ----- HIT RN, its text modification, its CA index name, and  
                   its structure diagram  
 HITSEQ ----- HIT RN, its text modification, its CA index name, its  
                   structure diagram, plus NTE and SEQ fields  
 FHITSTR ----- First HIT RN, its text modification, its CA index name, and  
                   its structure diagram  
 FHITSEQ ----- First HIT RN, its text modification, its CA index name, its  
                   structure diagram, plus NTE and SEQ fields  
 KWIC ----- Hit term plus 20 words on either side  
 OCC ----- Number of occurrence of hit term and field in which it occurs

To display a particular field or fields, enter the display field codes. For a list of the display field codes, enter HELP DFIELDS at an arrow prompt (=>). Examples of formats include: TI; TI,AU; BIB,ST; TI,IND; TI,SO. You may specify the format fields in any order and the information will be displayed in the same order as the format specification.

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 ENTER DISPLAY FORMAT (BIB):end

```

=> s l10 and ligand
      313869 LIGAND
      213276 LIGANDS
      427158 LIGAND
          (LIGAND OR LIGANDS)
L12      5 L10 AND LIGAND

=> dup rem l11 l12
PROCESSING COMPLETED FOR L11
PROCESSING COMPLETED FOR L12
L13      6 DUP REM L11 L12 (3 DUPLICATES REMOVED)
          ANSWERS '1-6' FROM FILE CAPLUS
  
```

```

=> d l13 ibib abs hitstr tot
  
```

```

L13 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE.1
ACCESSION NUMBER:      2006:882243 CAPLUS
DOCUMENT NUMBER:       145:450963
TITLE:                 Immobilization and Clustering of Structurally Defined
                        Oligosaccharides for Sugar Chips: An
                        Improved Method for Surface Plasmon
                        Resonance Analysis of Protein-Carbohydrate
                        Interactions
AUTHOR(S):             Suda, Yasuo; Arano, Akio; Fukui, Yasuhiro; Koshida,
  
```

Shuhei; Wakao, Masahiro; Nishimura, Tomoaki; Kusumoto, Shoichi; Sobel, Michael  
 CORPORATE SOURCE: Department of Nanostructure and Advanced Materials, Graduate School of Science and Engineering, Venture Business Laboratory, Kagoshima University, Kagoshima, 90-0065, Japan  
 SOURCE: Bioconjugate Chemistry (2006), 17(5), 1125-1135  
 CODEN: BCCHEs; ISSN: 1043-1802  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Oligosaccharides are increasingly being recognized as important partners in receptor-ligand binding and cellular signaling. Surface plasmon resonance (SPR) is a very powerful tool for the real-time study of the specific interactions between biol. mols. The authors report here an advanced method for the immobilization of oligosaccharides in clustered structures for SPR and their application to the anal. of heparin-protein interactions. Reductive amination reactions and linker mols. were designed and optimized. Using mono-, tri-, or tetravalent linker compds., the authors incorporated synthetic structurally defined disaccharide units of heparin and immobilized them as ligands for SPR. Their binding to an important hemostatic protein, von Willebrand factor (vWf), and its known heparin-binding domain was quant. analyzed. These multivalent ligand conjugates exhibited reproducible binding behavior, with consistency of the surface conditions of the SPR chip. This novel technique for oligosaccharide immobilization in SPR studies is accurate, specific, and easily applicable to both synthetic and naturally derived oligosaccharides.

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 2

ACCESSION NUMBER: 2005:902906 CAPLUS

DOCUMENT NUMBER: 143:244674

TITLE: Carbohydrate ligand complex, and method for analyzing protein using ligand complex

INVENTOR(S): Suda, Yasuo

PATENT ASSIGNEE(S): Japan Science and Technology Agency, Japan; National University Corporation Kagoshima University

SOURCE: PCT Int. Appl., 121 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005077965	A1	20050825	WO 2005-JP3220	20050218
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2556406	A1	20050825	CA 2005-2556406	20050218
EP 1726596	A1	20061129	EP 2005-710751	20050218
R:	DE, FI, FR, GB, IT, SE			

PRIORITY APPLN. INFO.:

JP 2004-41994  
WO 2005-JP3220A 20040218  
W 20050218

OTHER SOURCE(S): MARPAT 143:244674

AB A novel carbohydrate ligand complex is provided, which is effectively utilizable for analyzing the function of a protein. Also provided are a ligand carrier body, and a method for analyzing a protein using the ligand carrier body. The carbohydrate ligand complex possesses a structure represented by the general formula  $(XZ(NHCO)_9(CH_2)_pY)$ . In I, p or q represents an integer of 0 to 6; X represents a structure comprising one, two, or three hydrocarbon derivative chains which have an aromatic amino group at its terminus and may have a carbon-nitrogen bond in its main chain, resp.; Y represents a hydrocarbon structure containing one or more sulfur atoms; Z represents a linker compound with a linear structure comprising carbon-carbon bonds or carbon-oxygen bonds; and a carbohydrate possessing a reducing terminus is bound to the linker compound through the aromatic amino group.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 3

ACCESSION NUMBER: 2005:823685 CAPLUS

DOCUMENT NUMBER: 143:212120

TITLE: Preparation of thioctic acid-containing oligoethylene glycol linker compounds, oligosaccharide ligand complex thereof and process for producing them

INVENTOR(S): Suda, Yasuo; Arano, Akio; Kusumoto, Shoichi; Sobel, Michael; Wakao, Masahiro

PATENT ASSIGNEE(S): Japan Science and Technology Agency, Japan; National University Corporation Kagoshima University

SOURCE: PCT Int. Appl., 84 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005075453	A1	20050818	WO 2005-JP1726	20050204
WO 2005075453	A9	20060831		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, SM			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2559962	A1	20050818	CA 2005-2559962	20050204
EP 1731517	A1	20061213	EP 2005-709791	20050204

R: DE, FI, FR, GB, IT, SE

PRIORITY APPLN. INFO.:

JP 2004-29562 A 20040205  
WO 2005-JP1726 W 20050204

OTHER SOURCE(S): MARPAT 143:212120

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB There is provided a linker compound comprising the structure of the general formula (I) (wherein each of a, b, d and e independently is an integer of 0 to 6; X at a mol. end has an aromatic amino group and at its main chain has a structure of multi-branched structural site composed of 3 or more hydrocarbon-derived chains optionally having carbon-nitrogen bonds). A novel ligand complex consisting of the above linker compound having a sugar mol. introduced therein or ligand carrying substance and a process for producing them are also provided. This novel linker compound is useful as a linker capable of immobilizing sugar chains such as oligosaccharides on a support such as a surface plasmon resonance sensor chip for protein anal. It minimizes any nonspecific hydrophobic interactions with proteins and is capable of (1) easily regulating the length to disulfide group subjected to metal bond to thereby enable efficient formation of metal-sulfur bond and (2) regulating the distance between oligosaccharides on a sensor chip and enabling the two dimensional arrangement of oligosaccharides with good reproducibility. Thus, thioctic acid 3.4, HOBt 1.6, and EDC.HCl 3.2 mg were dissolved in 2 mL DMF, stirred under Ar with blocking light at 0°, treated with a solution of 23.5 mg RHN(CH<sub>2</sub>CH<sub>2</sub>O)<sub>4</sub>CH<sub>2</sub>CON[CH<sub>2</sub>CON[CH<sub>2</sub>CH<sub>2</sub>NHCOC<sub>6</sub>H<sub>4</sub>-p-NHR<sub>1</sub>]<sub>2</sub>]<sub>2</sub> (II; R = H, R<sub>1</sub> = Boc) in 2 mL DMF, and stirred at room temperature for 22 h to give, after workup and silica gel chromatog., 59% II (R = Q, R<sub>1</sub> = Boc) which (60.3 mg) was dissolved in 1 mL CH<sub>2</sub>Cl<sub>2</sub>, treated with 3 mL CF<sub>3</sub>CO<sub>2</sub>H, stirred at 0° for 1 h with blocking light to give, after ion exchange with Dowex Marathon A (OH<sup>-</sup> form), 91% II (R = Q, R<sub>1</sub> = H). II (R = Q, R<sub>1</sub> = H) (2.0 mg) and 10 mg trisaccharide (III) were dissolved in a mixture of H<sub>2</sub>O 100, DMF 400, and AcOH 10 mL, heated at 37° for 25 h with blocking light, treated with a solution of 3.51 mg NaBH<sub>3</sub>CN in 15 mL AcOH, and heated at 37° for 6 days to give, after purification using a column of Sephadex G-50, desalination using Sephadex G-25, and lyophilization, 22% II (R = Q, R<sub>1</sub> = Q<sub>1</sub>). Heparin concentration-dependently inhibited the binding of bFGF (heparin-binding protein) to II (R = Q, R<sub>1</sub> = Q<sub>1</sub>) immobilized on a sensor chip with IC<sub>50</sub> of 94 nM vs. 2.5 nM for a known ligand complex m-Q<sub>1</sub>NHC<sub>6</sub>H<sub>4</sub>NH<sub>2</sub>.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:823721 CAPLUS

DOCUMENT NUMBER: 143:208637

TITLE: Glycolipid-containing compound, biosensor carrying immobilized glycolipid-containing compound, glycolipid-containing microparticles, detection reagent containing the microparticles, and method for detecting sugar-binding compound

INVENTOR(S): Uzawa, Hiroataka; Minoura, Norihiko; Ohga, Koji

PATENT ASSIGNEE(S): National Institute of Advanced Industrial Science and Technology, Japan

SOURCE: PCT Int. Appl., 100 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005075493	A1	20050818	WO 2005-JP1931	20050209
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,			

GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
 LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,  
 NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,  
 TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW,  
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,  
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
 EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,  
 RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,  
 MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:

JP 2004-32403

A 20040209

OTHER SOURCE(S): MARPAT 143:208637

AB A glycolipid-containing compound is provided, which is characterized by being represented by the following general formula (I,  $\text{GnOCH}_2\text{CH}(\text{R}_2)\text{XR}_1$ ). In I, GN indicates a sugar chain moiety comprising N sugar mols. (N is an integer of 1 to 10) bound linearly or in a branched way by covalent bonding; X represents -O- or -NH-; and R<sub>1</sub> indicates a linker moiety represented by -C(=O)-C<sub>n</sub>H<sub>2n</sub>-Y or -CH<sub>2</sub>-C<sub>n</sub>H<sub>2n</sub>-Y (wherein n is an integer of 2 to 10, and Y represents a group having one or more thiol groups or one or more disulfide groups). Also provided are a biosensor carrying the immobilized glycolipid-containing compound, microparticles containing the glycolipid-containing compound, a detection reagent

containing the microparticles, and a method for detecting a sugar -binding substance (e.g., ricin toxin, Escherichia coli O-157, verotoxin, botulinus toxin, HIV, influenza virus) using the biosensor or the microparticles.

REFERENCE COUNT:

4

THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:47786 CAPLUS

DOCUMENT NUMBER: 136:98794

TITLE: Measurement chip for biosensor

INVENTOR(S): Kojima, Masayoshi

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002014099	A	20020118	JP 2000-196371	20000629
US 2002106654	A1	20020808	US 2001-895512	20010628
US 2003027199	A1	20030206	US 2002-236398	20020906
US 2003027200	A1	20030206	US 2002-236443	20020906
PRIORITY APPLN. INFO.:			JP 2000-196371	A 20000629
			US 2001-895512	A3 20010628

AB An easy method for immobilizing a physiol. active substance (e.g., immuol. protein, enzyme, microorganism, nucleic acid, low mol. weight organic compound, non-immuol. protein, Ig-binding protein, carbohydrate-binding protein, carbohydrate-recognizing polysaccharide, fatty acid, fatty acid ester, polypeptide/oligopeptide possessing ligand-binding ability) on metal surface to produce a measurement chip for a biosensor is provided, with which the treatment process is convenient and highly safe. The measurement chip for biosensor is composed of the metal surface or the metal film on a baseplate treated with a compound described by the general formula I: X-A-Y. In I, X signifies a heterocyclic group containing a Z-Z bond in a ring (Z signifies S, Se, or P); A signifies an aliphatic group, an aromatic group, a heterocyclic group, or a connecting group selected from the combination of

these groups; and Y signifies a functional group capable of covalently binding with a physiol. active substance.

L13 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:743719 CAPLUS

DOCUMENT NUMBER: 137:381677

TITLE: Immobilization of Peroxidase Glycoprotein on Gold Electrodes Modified with Mixed Epoxy-Boronic Acid Monolayers

AUTHOR(S): Abad, Jose M.; Velez, Marisela; Santamaria, Carolina; Guisan, Jose M.; Matheus, Pedro R.; Vazquez, Luis; Gazaryan, Irina; Gorton, Lo; Gibson, Tim; Fernandez, Victor M.

CORPORATE SOURCE: Instituto de Catalisis y Petroleoquimica, Instituto de Ciencia de Materiales de Madrid, CSIC, Campus Universidad Autonoma de Madrid, Madrid, 28049, Spain

SOURCE: Journal of the American Chemical Society (2002), 124(43), 12845-12853

CODEN: JACSAT; ISSN: 0002-7863

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The development of bioelectronic enzyme applications requires the immobilization of active proteins onto solid or colloidal substrates such as gold. Coverage of the gold surface with alkanethiol self-assembled monolayers (SAMs) reduces nonspecific adsorption of proteins and also allows the incorporation onto the surface of ligands with affinity for complementary binding sites on native proteins. We present in this work a strategy for the covalent immobilization of glycosylated proteins previously adsorbed through weak, reversible interactions, on tailored SAMs. Boronic acids, which form cyclic esters with saccharides, are incorporated into SAMs to weakly adsorb the glycoprotein onto the electrode surface through their carbohydrate moiety. To prevent protein release from the electrode surface, we combine the affinity motif of boronates with the reactivity of epoxy groups to covalently link the protein to heterofunctional boronate-epoxy SAMs. The principle underlying our strategy is the increased immobilization rate achieved by the weak interaction-induced proximity effect between slow reacting oxirane groups in the SAM and nucleophilic residues from adsorbed proteins, which allows the formation of very stable covalent bonds. This approach is exemplified by the use of phenylboronates-oxirane mixed monolayers as a reactive support and redox-enzyme horseradish peroxidase as glycoprotein for the preparation of peroxidase electrodes. Quartz crystal microbalance, atomic force

microscopy, and electrochem. measurements are used to characterize these enzymic electrodes. These epoxy-boronate functional monolayers are versatile, stable interfaces, ready to incorporate glycoproteins by incubation under mild conditions.

REFERENCE COUNT: 108 THERE ARE 108 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

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COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
79.39	252.62

FULL ESTIMATED COST

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE	TOTAL
ENTRY	SESSION
-6.24	-6.24

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